Patent Claims

1. A method for coupling a surface-oriented optoelectronic component to an end face of an optical fiber, in which

- the fiber is held at a holding point arranged at a predetermined distance from the end face in such a way that the end face can perform a pivoting movement about the holding point, and
- the end face of the fiber and the component are brought close to one another in the context of a coarse adjustment in such a way that a fine adjustment is subsequently effected between the component and the fiber in the context of an automatic self-centering by pivoting the fiber about the holding point.

2. The method as claimed in claim 1, wherein

- the component has a projecting structure arranged rotationally symmetrically with respect to the optically active zone of the component,
- the end face of the fiber and/or the projecting structure of the component are/is wetted with a transparent adhesive, and
- the component and the fiber are brought close in such a way that the adhesive propagates between the end face of the fiber and the projecting structure, thereby bringing about the self-centering of the fiber relative to the component.

3. The method as claimed in claim 2, wherein, after the self-centering, a curing of the adhesive is brought about for the purpose of fixing the centered arrangement between the fiber and the projecting section.

4. The method as claimed in claim 1, wherein the component is fixed in a housing and only afterward is the end face of the fiber subjected to coarse adjustment relative to the component fixed in the housing.

5. The method as claimed in claim 4, wherein the component is contact-connected after being fixed in the housing and the coarse adjustment of the end face of the fiber is effected relative to the component which has been fixed in the housing and contact-connected.

6. The method as claimed in claim 1, wherein a strain relief device is fitted to a housing that receives the component and to the fiber.

7. The method as claimed in claim 6, wherein a ferrule is fixed, as the strain relief device, to the housing and to the fiber.

8. The method as claimed in claim 7, wherein the ferrule is pushed onto the fiber before the coarse adjustment.

9. The method as claimed in claim 8, wherein the ferrule is pushed into a region of the ferrule which lies outside the pivoting range of the fiber delimited by the end face of the fiber and the holding point.

10. The method as claimed in claim 7, wherein the ferrule is pushed onto the fiber at that end of the fiber which is remote from the self-adjusting end side after the fiber has been self-centered relative to the component and the fiber has been fixed to the component.

11. The method as claimed in claim 7, wherein the ferrule is adhesively bonded both to the fiber and to the housing.

12. The method as claimed in claim 1, wherein, after the fiber has been fixed to the component, a coupling device is fitted to or formed at that end of the fiber which is remote from the end face.

13. The method as claimed in claim 12, wherein the coupling device is formed by a receptacle or a fiber pigtail.

14. The method as claimed in claim 4, wherein

- a passage hole is produced in a carrier of the housing,
- the component is fixed on a side of the carrier in such a way that the optically active zone of the component faces the passage hole, and
- the fiber is led through the passage hole and the coarse adjustment is carried out.

15. The method as claimed in claim 14, wherein

- the electrical connections of the component are electrically connected to conductor tracks present on the carrier,
- the electrical connections lying in the region of the passage hole and the conductor tracks projecting into the region of the passage hole.

16. The method as claimed in claim 2, wherein the diameter of the projecting structure is chosen to have exactly the same magnitude as the diameter of the fiber.

17. The method as claimed in claim 2, wherein the position of the projecting structure and the position

of the optically active zone of the component are defined in the context of one and the same lithography step.

18. The method as claimed in claim 1, wherein a VCSEL laser diode, an LED or a photodiode is coupled, as the surface-oriented optoelectronic component, to the fiber.

19. The method as claimed in claim 1, wherein, in the manner described, one component is connected to one end of the fiber and a further component is connected to the other end of the fiber.

20. An apparatus for coupling a surface-oriented optoelectronic component to an optical fiber,

- having a baseplate for holding the component, and
- having a holding element arranged at a predetermined distance from the baseplate,
- the holding element serving to hold the fiber and enabling a pivotable movement of the fiber in a pivoting range of the fiber delimited by the end face of the fiber and the holding point above the baseplate.

21. An optoelectronic module having a surface-oriented optoelectronic component, having an optical fiber and having a housing,

- the housing having a carrier with a passage hole,
- the component being fixed on a side of the carrier in such a way that the active zone of the component faces the passage hole,
- the fiber being led through the passage hole and the component and the fiber being coupled,
- electrical connections of the component being electrically connected to conductor tracks present on the carrier

- the electrical connections of the component lying in the region of the passage hole and the conductor tracks projecting into the region of the passage hole to form a suspension for the component.